

**Claims**

What is claimed:

1. A method for preventing a layer-2 forwarding loop within a data-stitching network element, the method comprising:

10 assigning a new network circuit to the data-stitching network element;

determining that the new network circuit is assigned a VLAN that was previously assigned to an existing network circuit; and

15 running spanning tree on a data-stitch created by the new network circuit.

2. The method of claim 1, wherein running spanning tree on the data-stitch blocks the data-stitch.

20 3. The method of claim 2, further comprising:

removing a network circuit from the data-stitching network element;

determining that the removed network circuit was assigned a VLAN that is also used by another network circuit;

25 removing spanning tree from the other network circuit.

4. The method of claim 3, further comprising determining that the another network circuit had spanning tree run thereon.

5           5.    The method of claim 4, wherein said removing will be performed only in response to a determination that the another network circuit had spanning tree run thereon.

10           6.    The method of claim 3, further comprising determining if the removed network circuit had spanning tree run thereon.

15           7.    The method of claim 6, wherein said removing will be performed only in response to a determination that the removed network circuit did not have spanning tree run thereon.

20           8.    The method of claim 6, wherein said determining that the removed network circuit was assigned a VLAN that is also used by another network circuit will be performed only in response to a determination that the removed network circuit did not have spanning tree run thereon.

            9.    The method of claim 4, further comprising determining if the removed network circuit had spanning tree run thereon.

25           10.   The method of claim 9, wherein said determining that the another network circuit had spanning tree run thereon will be performed only in response to a determination that the removed network circuit did not have spanning tree run thereon.

5           11. A computer program embodied on a computer readable medium for preventing a layer-2 forwarding loop within a data-stitching network element, the computer program comprising:

          a code segment for assigning a new network circuit to the data-stitching network element;

10           a code segment for determining that the new network circuit is assigned a VLAN that was previously assigned to an existing network circuit; and

          a code segment for running spanning tree on a data-stitch created by the new network circuit.

15           12. A method for ensuring that no layer-2 forwarding loops will be allowed within a telecommunications network, the method comprising:

          defining a new network circuit for a network element;

20           assigning a VLAN for the new network circuit;

          running spanning tree on links of the network element associated with the new network circuit and assigned the VLAN; and

          if the network element is a data-stitching network element:

25           determining that the VLAN assigned to the new network circuit was previously assigned to an existing network circuit, and

          running spanning tree on a data-stitch created by the new network circuit.

13. The method of claim 12, wherein said assigning a VLAN for the new network circuit includes:

assigning a test VLAN for the new network circuit;

determining assignment of VLANs to other network circuits

10 associated with the network element;

determining if the test VLAN intersects entirely with any of the other assigned VLANs;

determining if the test VLAN is distinct from all the other assigned VLANs; and

15 accepting the test VLAN in response to

a determination that the test VLAN intersects entirely with any of the other assigned VLANs, or

a determination that the test VLAN is distinct.

from all the other assigned VLANs.

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14. A system for ensuring that no layer-2 forwarding loops will be allowed within a telecommunications network, the system comprising:

means for defining a new network circuit for a network

25 element;

means for assigning a VLAN for the new network circuit;

means for running spanning tree on links of the network element associated with the new network circuit and assigned the VLAN; and

5 a data-stitching network element including:

means for determining that the VLAN assigned to the new network circuit was previously assigned to an existing network circuit, and

means for running spanning tree on a data-stitch  
10 created by the new network circuit.

15. A method for preventing a data-stitch within a data-stitching network element from inadvertently being blocked, the method comprising:

15 removing a network circuit from the data-stitching network element;

determining that the removed network circuit was assigned a VLAN that is also used by another network circuit; and

removing spanning tree from a data-stitch associated with  
20 the other network circuit.

16. The method of claim 15, further comprising determining that the removed network circuit did not have spanning tree run thereon.

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17. The method of claim 15, further comprising determining that the other network circuit had spanning tree run thereon.

5        18. A method for ensuring that no paths within a telecommunications network will inadvertently be blocked, the method comprising:

removing a new network circuit from a network element;

disassociating links of the network element from a VLAN

10 assignment associated with the removed network circuit; and

if the network element is a data-stitching network element:

determining that the removed network circuit was

assigned a VLAN that is also used by another network circuit, and

removing spanning tree from a data-stitch associated

15 with the other network circuit.

19. A network device for preventing formation of layer-2 forwarding loops within a telecommunications network, the network device comprising:

20 memory;

one or more network interfaces; and

a processor configured to:

define a new network circuit for the network device;

assign a VLAN for the new network circuit;

25 determine that the VLAN assigned to the new network circuit was previously assigned to an existing network circuit, and

run spanning tree on a data-stitch created by the new network circuit.

20. The network device of claim 19, wherein said processor assigns a VLAN for the new network circuit by:

assigning a test VLAN for the new network circuit;

determining assignment of VLANs to other network circuits

10 associated with the network device;

determining if the test VLAN intersects entirely with any of the other assigned VLANs;

determining if the test VLAN is distinct from all the other assigned VLANs; and

15 accepting the test VLAN in response to

a determination that the test VLAN intersects entirely with any of the other assigned VLANs, or

a determination that the test VLAN is distinct.

from all the other assigned VLANs.

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21. The network device of claim 19, wherein said processor is further configured to run spanning tree on links of the network device associated with the new network circuit and assigned the VLAN.

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22. The network device of claim 19, wherein said processor is further configured to:

remove a network circuit from the network device;

5           determine that the removed network circuit was assigned a  
VLAN that is also used by another network circuit; and  
remove spanning tree from a data-stitch associated with the  
other network circuit.

10           23. The network device of claim 22, wherein said processor  
is further configured to disassociate links of the network device  
from a VLAN assignment associated with the removed network  
circuit.

15           24. A network device for preventing paths within a  
telecommunications network from inadvertently being blocked, the  
network device comprising:

memory;

one or more network interfaces; and

20           a processor configured to:

remove a network circuit from the network device;

determine that the removed network circuit was assigned  
a VLAN that is also used by another network circuit, and

remove spanning tree from a data-stitch associated with  
25 the other network circuit.

5           25. The network device of claim 24, wherein said processor is further configured to disassociate links of the network device from a VLAN assignment associated with the removed network circuit.

10           26. The network device of claim 24, wherein said processor is further configured to determine that the removed network circuit did not have spanning tree run thereon.

15           27. The network device of claim 24, wherein said processor is further configured to determine that the other network circuit had spanning tree run thereon.

            28. The network device of claim 24, wherein said processor is further configured to:

20           define a new network circuit for the network device;  
            assign a VLAN for the new network circuit;  
            determine that the VLAN assigned to the new network circuit was previously assigned to an existing network circuit; and  
            run spanning tree on a data-stitch created by the new  
25           network circuit.

            29. The network device of claim 28, wherein said processor is further configured to run spanning tree on links of the network device associated with the new network circuit and  
30           assigned the VLAN.